



SURES hexapod

High resolution high rigidity hexapod for astronomy



KEY FEATURES

- Payload capacity up to 500 kg
- Resolution $0.1 \mu\text{m}$
- Low cross coupling motions
- Operational in all orientation



APPLICATIONS

- Positioning of mirror of telescope
- Radio testing
- High accuracy positioning
- Antenna qualification
- Optical adjustment



SURES hexapod positions the 450 kg secondary mirror of OAJ T250 telescope in Spain with $0.35 \mu\text{m}$ linear and 0.5 arcsec angular resolutions. The SURES hexapod for OAJ has a 920 mm diameter.



ARIES telescope is installed in Nainital in India. With a primary mirror of 3.6 m diameter, it is the largest optical centre in the country. Cross-coupling of SURES hexapod is less than 0.7 arcsec in tip-tilt during centering or focus.



The hexapod is installed on Pan-STARRS-2 telescope at an altitude of 4267 m on Maui, Hawaii. A smaller version of SURES has been adapted as the secondary mirror is 600 mm diameter and weighs less than 110 kg.

	SURES
Motion and positioning	
Travel range Tx, Ty (mm)	± 8
Travel range Tz (mm)	± 6
Travel range Rx, Ry, Rz (°)	± 1
Resolution Tx, Ty, Tz (µm)	0.1
Resolution Rx, Ry, Rz (µrad)	1.5
Repeatability Tx, Ty (µm)	± 0.25
Repeatability Tz (µm)	± 0.13
Repeatability Rx, Ry, Rz (µrad)	± 0.5
Mechanical properties	
Payload capacity (kg) (with orientation from 0° to 90°)	up to 500
Motor type	Brushless motor with absolute encoder
Miscellaneous	
Operating temperature range (°C)	-20 to + 40
Humidity level (%)	up to 100
Materials	Aluminum, steel, stainless steel
Size mobile platform (mm)	Ø 690
Height in middle position (mm)	360
Mass (kg)	117
Cable length (m)	10 (longer on request)
Options	Customized platform design Modular external diameter
Controller	
Controller type	ALPHA+ custom
Interface	Ethernet
Power supply	120-240 VAC / 50-60 Hz

The performances are specified for single axis motions, with all other axes at midrange and for a rotation center in the middle of the mobile platform.

